

**AMENDMENTS TO THE SPECIFICATION:**

**Please replace the paragraph beginning at page 1, line 13 with the following amended paragraph (insertions are underlined, deletions are in ~~strikethrough~~):**

Provided herein are compounds that bind to androgen receptors and/or modulate activity of androgen receptors, and [[to]] methods for making and using such compounds. Also provided are compositions containing such compounds and methods for making and using such compositions.

**Please replace the section on page 6, lines 25-29 with the following amended section:**

$R^C$  is selected from an optionally substituted aryl and an optionally substituted heteroaryl that is optionally substituted with a substituent selected from F, Cl, Br, I, CN,  $OR^A$ ,  $NO_2$ ,  $NR^A R^B$ ,  $SR^A$ ,  $SOR^A$ ,  $SO_2R^A$ , an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, and an optionally substituted  $C_1$ - $C_4$  heteroalkyl;

**Please replace the paragraph beginning at page 8, line 11 with the following amended paragraph:**

In certain embodiments, [[the]] provided herein are methods for identifying a compound that is capable of modulating an activity of an androgen receptor, by contacting a cell expressing an androgen receptor with a compound provided herein; and monitoring an effect of the compound upon the cell.

**Please replace the paragraph beginning at page 8, line 15 with the following amended paragraph:**

In certain embodiments, provided herein are methods for treating a patient by administering to the patient a compound provided herein. In certain embodiments, the methods provided herein are for maintenance of muscle strength and function (e.g., in the elderly); reversal or prevention of frailty or age-related functional decline ("ARFD") in the elderly (e.g., sarcopenia); treatment of catabolic side effects of glucocorticoids; prevention and/or treatment of reduced bone mass, density or growth (e.g., osteoporosis and osteopenia); treatment of chronic fatigue syndrome (CFS); chronic myalgia; treatment of acute fatigue syndrome and muscle loss following elective surgery (e.g., post-surgical rehabilitation);

accelerating of wound healing; accelerating bone fracture repair (such as accelerating the recovery of hip fracture patients); accelerating healing of complicated fractures, e.g. distraction osteogenesis; in joint replacement; prevention of post-surgical adhesion formation; acceleration of tooth repair or growth; maintenance of sensory function (e.g., hearing, sight, olfaction and taste); treatment of periodontal disease; treatment of wasting secondary to fractures and wasting in connection with chronic obstructive pulmonary disease (COPD), chronic liver disease, AIDS, weightlessness, cancer cachexia, burn and trauma recovery, chronic catabolic state (e.g., coma), eating disorders (e.g., anorexia) and chemotherapy; treatment of cardiomyopathy; treatment of thrombocytopenia; treatment of growth retardation in connection with Crohn's disease; treatment of short bowel syndrome; treatment of irritable bowel syndrome; treatment of inflammatory bowel disease; treatment of Crohn's disease and ulcerative *colitis*; treatment of complications associated with transplantation; treatment of physiological short stature including growth hormone deficient children and short stature associated with chronic illness; treatment of obesity and growth retardation associated with obesity; treatment of anorexia (e.g., associated with cachexia or aging); treatment of hypercortisolism and Cushing's syndrome; Paget's disease; treatment of osteoarthritis; induction of pulsatile growth hormone release; treatment of osteochondrodysplasias; treatment of depression, nervousness, irritability and stress; treatment of reduced mental energy and low self-esteem (e.g., motivation/assertiveness); improvement of cognitive function (e.g., the treatment of dementia, including Alzheimer's disease and short term memory loss); treatment of catabolism in connection with pulmonary dysfunction and ventilator dependency; treatment of cardiac dysfunction (e.g., associated with valvular disease, myocardial infarction, cardiac hypertrophy or congestive heart failure); lowering blood pressure; protection against ventricular dysfunction or prevention of reperfusion events; treatment of adults in chronic dialysis; reversal or slowing of the catabolic state of aging; attenuation or reversal of protein catabolic responses following trauma (e.g., reversal of the catabolic state associated with surgery, congestive heart failure, cardiac myopathy, burns, cancer, COPD etc.); reducing cachexia and protein loss due to chronic illness such as cancer or AIDS; treatment of hyperinsulinemia including nesidioblastosis; treatment of immunosuppressed patients; treatment of wasting in connection with multiple sclerosis or other neurodegenerative disorders; promotion of myelin repair; maintenance of skin thickness; treatment of metabolic homeostasis and renal homeostasis (e.g., in the frail elderly); stimulation of osteoblasts, bone remodeling and cartilage growth; regulation of food

intake; treatment of insulin resistance, including NIDDM, in mammals (e.g., humans); treatment of insulin resistance in the heart; improvement of sleep quality and correction of the relative hyposomatotropism of senescence due to high increase in REM sleep and a decrease in REM latency; treatment of hypothermia; treatment of congestive heart failure; treatment of lipodystrophy (e.g., in patients taking HIV or AIDS therapies such as protease inhibitors); treatment of muscular atrophy (e.g., due to physical inactivity, bed rest or reduced weight-bearing conditions); treatment of musculoskeletal impairment (e.g., in the elderly); improvement of the overall pulmonary function; treatment of sleep disorders; and the treatment of the catabolic state of prolonged critical illness; treatment of hirsutism, acne, seborrhea, androgenic alopecia, anemia, hyperpilosity, benign prostate hypertrophy, adenomas and neoplasies of the prostate (e.g., advanced metastatic prostate cancer) and malignant tumor cells containing the androgen receptor, such as is the case for breast, brain, skin, ovarian, bladder, lymphatic, liver and kidney cancers; cancers of the skin, pancreas, endometrium, lung and colon; osteosarcoma; hypercalcemia of malignancy; metastatic bone disease; treatment of spermatogenesis, endometriosis and polycystic ovary syndrome; ~~conteracting~~ counteracting preeclampsia, eclampsia of pregnancy and preterm labor; treatment of premenstrual premenstrual syndrome; treatment of vaginal dryness; age related decreased testosterone levels in men, male menopause, hypogonadism, male hormone replacement, male and female sexual dysfunction (e.g., erectile dysfunction, decreased sex drive, sexual well-being, decreased libido), male and female contraception, hair loss, Reaven's Syndrome and the enhancement of bone and muscle performance/strength.

**Please replace the paragraph beginning at page 12, line 4 with the following amended paragraph:**

Unless defined otherwise, all technical and scientific terms used herein have the same meaning as is commonly understood by one of skill in the art to which the claimed subject matter belongs. All patents, patent applications, and published materials referred to throughout the entire disclosure herein, unless noted otherwise, are incorporated by reference in their entirety. In the event that there are a plurality of definitions for terms herein, those in this section prevail. Where reference is made to a URL or other such identifier or address, it is understood that such identifiers can change and particular information on the internet can come and go, but equivalent information can be found by searching the internet. Reference thereto evidences the availability and public dissemination of such information.

**Please replace the paragraph beginning at page 13, line 29 with the following amended paragraph:**

As used herein, the terms “treating” or “treatment” encompass either or both responsive and prophylaxis measures, e.g., designed to inhibit or delay the onset of the disease or disorder, achieve a full or partial reduction of the symptoms or disease state, and/or to alleviate, ameliorate, lessen, or cure the disease or disorder and/or its symptoms. Treatment also encompasses any pharmaceutical use of the compositions herein, such as use for treating [[a]] gluocorticoid mediated diseases or disorders.

**Please replace the paragraph beginning at page 17, line 17 with the following amended paragraph:**

As used herein, the term “aromatic” refers to a group containing a covalently closed ring having a delocalized  $\pi$ -electron system. Aromatic rings can be formed by three, four, five, six, seven, eight, nine, or more than nine atoms. Aromatics can be optionally substituted. Examples of aromatic groups include, but are not limited to phenyl, naphthalenyl, phenanthrenyl, anthracenyl, tetralinyl, fluorenyl, indenyl, and indanyl. The term aromatic includes, for example, benzenoid groups, connected via one of the ring-forming carbon atoms, and optionally carrying one or more substituents selected from an aryl, a heteroaryl, a cycloalkyl, a non-aromatic heterocycle, a halo, a hydroxy, an amino, a cyano, a nitro, an alkylamido, an acyl, a C<sub>1</sub>-C<sub>6</sub>alkoxy, a C<sub>1</sub>-C<sub>6</sub>alkyl, a hydroxy C<sub>1</sub>-C<sub>6</sub>alkyl, [[a]] an aminoC<sub>1</sub>-C<sub>6</sub>alkyl, a C<sub>1</sub>-C<sub>6</sub>alkylamino, an alkylsulfonyl, an alkylsulfinyl, an alkylsulfonyl, [[an]] a sulfamoyl, or a trifluoromethyl. In certain embodiments, an aromatic group is substituted at one or more of the para, meta, and/or ortho positions. Examples of aromatic groups containing substitutions include, but are not limited to, phenyl, 3-halophenyl, 4-halophenyl, 3-hydroxyphenyl, 4-hydroxyphenyl, 3-aminophenyl, 4-aminophenyl, 3-methylphenyl, 4-methylphenyl, 3-methoxyphenyl, 4-methoxyphenyl, 4-trifluoromethoxyphenyl, 3-cyanophenyl, 4-cyanophenyl, dimethylphenyl, naphthyl, hydroxynaphthyl, hydroxymethylphenyl, (trifluoromethyl)phenyl, alkoxyphenyl, 4-morpholin-4-ylphenyl, 4-pyrrolidin-1-ylphenyl, 4-pyrazolylphenyl, 4-triazolylphenyl, and 4-(2-oxopyrrolidin-1-yl)phenyl.

**Please replace the paragraph beginning at page 22, line 27 with the following amended paragraph:**

As used herein, a “prodrug” refers to [an] a pharmaceutical agent that is converted from a less active form into a corresponding more active form *in vivo*. A prodrug is a compound that, upon *in vivo* administration, is metabolized by one or more steps or processes or otherwise converted to the biologically, pharmaceutically or therapeutically active form of the compound. To produce a prodrug, the pharmaceutically active compound is modified such that the active compound will be regenerated by metabolic processes. The prodrug can be designed to alter the metabolic stability or the transport characteristics of a drug, to mask side effects or toxicity, to improve the flavor of a drug or to alter other characteristics or properties of a drug. By virtue of knowledge of pharmacodynamic processes and drug metabolism *in vivo*, those of skill in this art, once a pharmaceutically active compound is known, can design prodrugs of the compound (see, *e.g.*, Nogradi (1985) *Medicinal Chemistry A Biochemical Approach*, Oxford University Press, New York, pages 388-392).

**Please replace the paragraph beginning at page 23, line 15 with the following amended paragraph:**

As used herein, pharmaceutically acceptable derivatives of a compound include salts, esters, enol ethers, enol esters, acetals, ketals, orthoesters, hemiacetals, hemiketals, acids, bases, solvates, hydrates or prodrugs thereof. Such derivatives can be readily prepared by those of skill in this art using known methods for such derivatization. The compounds produced can be administered to animals or humans without substantial toxic effects and either are pharmaceutically active or are prodrugs. Pharmaceutically acceptable salts include, but are not limited to, amine salts, such as but not limited to N,N'-dibenzylethylenediamine, chloroprocaine, choline, ammonia, diethanolamine and other hydroxyalkylamines, ethylenediamine, N-methylglucamine, procaine, N-benzylphenethylamine, 1-para-chlorobenzyl-2-pyrrolidin-1'-ylmethylbenzimidazole, diethylamine and other alkylamines, piperazine and tris(hydroxymethyl)aminomethane; alkali metal salts, such as but not limited to lithium, potassium and sodium; alkali earth metal salts, such as but not limited to barium, calcium and magnesium; transition metal salts, such as but not limited to zinc; and other metal salts, such as but not limited to sodium hydrogen phosphate and disodium phosphate; and also including, but not limited to, salts of mineral acids, such as but not limited to hydrochlorides and sulfates; and salts of organic acids, such as but not limited to acetates,

lactates, malates, tartrates, citrates, ascorbates, succinates, butyrates, valerates and fumarates.

Pharmaceutically acceptable esters include, but are not limited to, alkyl, alkenyl, alkynyl, aryl, heteroaryl, aralkyl, heteroaralkyl, cycloalkyl and heterocyclyl esters of acidic groups, including, but not limited to, carboxylic acids, phosphoric acids, phosphinic acids, sulfonic acids, sulfinic acids and boronic acids. Pharmaceutically acceptable enol ethers include, but are not limited to, derivatives of formula  $C=C(OR)$  where R is hydrogen, alkyl, alkenyl, alkynyl, aryl, heteroaryl, aralkyl, heteroaralkyl, cycloalkyl [[ar]] or heterocyclyl.

Pharmaceutically acceptable enol esters include, but are not limited to, derivatives of formula  $C=C(OC(O)R)$  where R is hydrogen, alkyl, alkenyl, alkynyl, aryl, heteroaryl, aralkyl, heteroaralkyl, cycloalkyl [[ar]] or heterocyclyl. Pharmaceutically acceptable solvates and hydrates are complexes of a compound with one or more solvent or water molecules, or 1 to about 100, or 1 to about 10, or one to about 2, 3 or 4, solvent or water molecules.

**Please replace the section on page 31, lines 15-19 with the following amended section:**

$R^C$  is selected from an optionally substituted aryl and an optionally substituted heteroaryl that is optionally substituted with a substituent selected from F, Cl, Br, I, CN,  $OR^A$ ,  $NO_2$ ,  $NR^A R^B$ ,  $SR^A$ ,  $SOR^A$ ,  $SO_2R^A$ , an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, and an optionally substituted  $C_1$ - $C_4$  heteroalkyl;

**Please replace the paragraph beginning at page 33, line 2 with the following amended paragraph:**

In certain embodiments,  $R^{18}$  and  $R^{19}$  are each independently selected from hydrogen, F, Cl, Br, I,  $OR^A$ ,  $SR^A$ ,  $NO_2$ , CN, an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  ~~$C_1$ - $C_4$ - $C_1$ - $C_4$~~  haloalkyl, an optionally substituted  $C_1$ - $C_4$  heteroalkyl,  $NHCOR^A$ ,  $NHCONR^A R^B$ ,  $COR^A$ ,  $CO_2R^A$ ,  $CONR^A R^B$ ,  $SOR^A$ ,  $SO_2R^A$ , and  $SO_2NR^A R^B$ .

**Please replace the section on page 36, lines 26-30 with the following amended section:**

$R^C$  is selected from an optionally substituted aryl and an optionally substituted heteroaryl that is optionally substituted with a substituent selected from F, Cl, Br, I, CN,  $OR^A$ ,  $NO_2$ ,  $NR^A R^B$ ,  $SR^A$ ,  $SOR^A$ ,  $SO_2R^A$ , an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, and an optionally substituted  $C_1$ - $C_4$  heteroalkyl;

**Please replace the section on page 48, lines 1-5 with the following amended section:**

$R^C$  is selected from an optionally substituted aryl and an optionally substituted heteroaryl that is optionally substituted with a substituent selected from F, Cl, Br, I, CN,  $OR^A$ ,  $NO_2$ ,  $NR^A R^B$ ,  $SR^A$ ,  $SOR^A$ ,  $SO_2 R^A$ , an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, and an optionally substituted  $C_1$ - $C_4$  heteroalkyl;

**Please replace the section on page 50, lines 7-11 with the following amended section:**

$R^C$  is selected from an optionally substituted aryl and an optionally substituted heteroaryl that is optionally substituted with a substituent selected from F, Cl, Br, I, CN,  $OR^A$ ,  $NO_2$ ,  $NR^A R^B$ ,  $SR^A$ ,  $SOR^A$ ,  $SO_2 R^A$ , an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, and an optionally substituted  $C_1$ - $C_4$  heteroalkyl;

**Please replace the section on page 52, lines 24-28 with the following amended section:**

$R^C$  is selected from an optionally substituted aryl and an optionally substituted heteroaryl that is optionally substituted with a substituent selected from F, Cl, Br, I, CN,  $OR^A$ ,  $NO_2$ ,  $NR^A R^B$ ,  $SR^A$ ,  $SOR^A$ ,  $SO_2 R^A$ , an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, and an optionally substituted  $C_1$ - $C_4$  heteroalkyl;

**Please replace the section on page 55, lines 10-14 with the following amended section:**

$R^C$  is selected from an optionally substituted aryl and an optionally substituted heteroaryl that is optionally substituted with a substituent selected from F, Cl, Br, I, CN,  $OR^A$ ,  $NO_2$ ,  $NR^A R^B$ ,  $SR^A$ ,  $SOR^A$ ,  $SO_2 R^A$ , an optionally substituted  $C_1$ - $C_4$  alkyl, an optionally substituted  $C_1$ - $C_4$  haloalkyl, and an optionally substituted  $C_1$ - $C_4$  heteroalkyl;

**Please replace the paragraph beginning at page 62, line 8 with the following amended paragraph:**

The pharmaceutical compositions provided herein contain therapeutically effective amounts of one or more of the androgen receptor activity modulators provided herein that are

useful in the prevention, treatment, or amelioration of one or more of the symptoms of diseases or disorders associated with androgen receptor activity. Such prevention, treatment, or amelioration of diseases or disorders include, but are not limited to, maintenance of muscle strength and function (e.g., in the elderly); reversal or prevention of frailty or age-related functional decline ("ARFD") in the elderly (e.g., sarcopenia); treatment of catabolic side effects of glucocorticoids; prevention and/or treatment of reduced bone mass, density or growth (e.g., osteoporosis and osteopenia); treatment of chronic fatigue syndrome (CFS); chronic myalgia; treatment of acute fatigue syndrome and muscle loss following elective surgery (e.g., post-surgical rehabilitation); accelerating of wound healing; accelerating bone fracture repair (such as accelerating the recovery of hip fracture patients); accelerating healing of complicated fractures, e.g. distraction osteogenesis; in joint replacement; prevention of post-surgical adhesion formation; acceleration of tooth repair or growth; maintenance of sensory function (e.g., hearing, sight, olfaction and taste); treatment of periodontal disease; treatment of wasting secondary to fractures and wasting in connection with chronic obstructive pulmonary disease (COPD), chronic liver disease, AIDS, weightlessness, cancer cachexia, burn and trauma recovery, chronic catabolic state (e.g., coma), eating disorders (e.g., anorexia) and chemotherapy; treatment of cardiomyopathy; treatment of thrombocytopenia; treatment of growth retardation in connection with Crohn's disease; treatment of short bowel syndrome; treatment of irritable bowel syndrome; treatment of inflammatory bowel disease; treatment of Crohn's disease and ulcerative colitis; treatment of complications associated with transplantation; treatment of physiological short stature including growth hormone deficient children and short stature associated with chronic illness; treatment of obesity and growth retardation associated with obesity; treatment of anorexia (e.g., associated with cachexia or aging); treatment of hypercortisolism and Cushing's syndrome; Paget's disease; treatment of osteoarthritis; induction of pulsatile growth hormone release; treatment of osteochondrodysplasias; treatment of depression, nervousness, irritability and stress; treatment of reduced mental energy and low self-esteem (e.g., motivation/assertiveness); improvement of cognitive function (e.g., the treatment of dementia, including Alzheimer's disease and short term memory loss); treatment of catabolism in connection with pulmonary dysfunction and ventilator dependency; treatment of cardiac dysfunction (e.g., associated with valvular disease, myocardial infarction, cardiac hypertrophy or congestive heart failure); lowering blood pressure; protection against ventricular dysfunction or prevention of reperfusion events; treatment of adults in chronic

dialysis; reversal or slowing of the catabolic state of aging; attenuation or reversal of protein catabolic responses following trauma (e.g., reversal of the catabolic state associated with surgery, congestive heart failure, cardiac myopathy, burns, cancer, COPD etc.); reducing cachexia and protein loss due to chronic illness such as cancer or AIDS; treatment of hyperinsulinemia including nesidioblastosis; treatment of immunosuppressed patients; treatment of wasting in connection with multiple sclerosis or other neurodegenerative disorders; promotion of myelin repair; maintenance of skin thickness; treatment of metabolic homeostasis and renal homeostasis (e.g., in the frail elderly); stimulation of osteoblasts, bone remodeling and cartilage growth; regulation of food intake; treatment of insulin resistance, including NIDDM, in mammals (e.g., humans); treatment of insulin resistance in the heart; improvement of sleep quality and correction of the relative hyposomatotropism of senescence due to high increase in REM sleep and a decrease in REM latency; treatment of hypothermia; treatment of congestive heart failure; treatment of lipodystrophy (e.g., in patients taking HIV or AIDS therapies such as protease inhibitors); treatment of muscular atrophy (e.g., due to physical inactivity, bed rest or reduced weight-bearing conditions); treatment of musculoskeletal impairment (e.g., in the elderly); improvement of the overall pulmonary function; treatment of sleep disorders; and the treatment of the catabolic state of prolonged critical illness; treatment of hirsutism, acne, seborrhea, androgenic alopecia, anemia, hyperpilosity, benign prostate hypertrophy, adenomas and neoplasies of the prostate (e.g., advanced metastatic prostate cancer) and malignant tumor cells containing the androgen receptor, such as is the case for breast, brain, skin, ovarian, bladder, lymphatic, liver and kidney cancers; cancers of the skin, pancreas, endometrium, lung and colon; osteosarcoma; hypercalcemia of malignancy; metastatic bone disease; treatment of spermatogenesis, endometriosis and polycystic ovary syndrome; ~~conteracting~~ counteracting preeclampsia, eclampsia of pregnancy and preterm labor; treatment of premenstrual premenstrual syndrome; treatment of vaginal dryness; age related decreased testosterone levels in men, male menopause, hypogonadism, male hormone replacement, male and female sexual dysfunction (e.g., erectile dysfunction, decreased sex drive, sexual well-being, decreased libido), male and female contraception, hair loss, Reaven's Syndrome and the enhancement of bone and muscle performance/strength.

**Please replace the paragraph beginning at page 64, line 30 with the following amended paragraph:**

In the compositions, effective concentrations of one or more compounds or pharmaceutically acceptable derivatives is (are) mixed with a suitable pharmaceutical carrier or vehicle. The compounds can be derivatized as the corresponding salts, esters, enol ethers or esters, acids, bases, solvates, hydrates or prodrugs prior to formulation, as described above. The concentrations of the compounds in the compositions are effective for delivery of an amount, upon administration, that treats, prevents, or ameliorates one or more of the symptoms of diseases or disorders associated with androgen activity or in which androgen activity is implicated. Such prevention, treatment, or amelioration diseases or disorders include, but are not limited to, maintenance of muscle strength and function (e.g., in the elderly); reversal or prevention of frailty or age-related functional decline ("ARFD") in the elderly (e.g., sarcopenia); treatment of catabolic side effects of glucocorticoids; prevention and/or treatment of reduced bone mass, density or growth (e.g., osteoporosis and osteopenia); treatment of chronic fatigue syndrome (CFS); chronic myalgia; treatment of acute fatigue syndrome and muscle loss following elective surgery (e.g., post-surgical rehabilitation); accelerating of wound healing; accelerating bone fracture repair (such as accelerating the recovery of hip fracture patients); accelerating healing of complicated fractures, e.g. distraction osteogenesis; in joint replacement; prevention of post-surgical adhesion formation; acceleration of tooth repair or growth; maintenance of sensory function (e.g., hearing, sight, olfaction and taste); treatment of periodontal disease; treatment of wasting secondary to fractures and wasting in connection with chronic obstructive pulmonary disease (COPD), chronic liver disease, AIDS, weightlessness, cancer cachexia, burn and trauma recovery, chronic catabolic state (e.g., coma), eating disorders (e.g., anorexia) and chemotherapy; treatment of cardiomyopathy; treatment of thrombocytopenia; treatment of growth retardation in connection with Crohn's disease; treatment of short bowel syndrome; treatment of irritable bowel syndrome; treatment of inflammatory bowel disease; treatment of Crohn's disease and ulcerative colitis; treatment of complications associated with transplantation; treatment of physiological short stature including growth hormone deficient children and short stature associated with chronic illness; treatment of obesity and growth retardation associated with obesity; treatment of anorexia (e.g., associated with cachexia or aging); treatment of hypercortisolism and Cushing's syndrome; Paget's disease; treatment of osteoarthritis; induction of pulsatile growth hormone release; treatment of

osteochondrodysplasias; treatment of depression, nervousness, irritability and stress; treatment of reduced mental energy and low self-esteem (e.g., motivation/assertiveness); improvement of cognitive function (e.g., the treatment of dementia, including Alzheimer's disease and short term memory loss); treatment of catabolism in connection with pulmonary dysfunction and ventilator dependency; treatment of cardiac dysfunction (e.g., associated with valvular disease, myocardial infarction, cardiac hypertrophy or congestive heart failure); lowering blood pressure; protection against ventricular dysfunction or prevention of reperfusion events; treatment of adults in chronic dialysis; reversal or slowing of the catabolic state of aging; attenuation or reversal of protein catabolic responses following trauma (e.g., reversal of the catabolic state associated with surgery, congestive heart failure, cardiac myopathy, burns, cancer, COPD etc.); reducing cachexia and protein loss due to chronic illness such as cancer or AIDS; treatment of hyperinsulinemia including nesidioblastosis; treatment of immunosuppressed patients; treatment of wasting in connection with multiple sclerosis or other neurodegenerative disorders; promotion of myelin repair; maintenance of skin thickness; treatment of metabolic homeostasis and renal homeostasis (e.g., in the frail elderly); stimulation of osteoblasts, bone remodeling and cartilage growth; regulation of food intake; treatment of insulin resistance, including NIDDM, in mammals (e.g., humans); treatment of insulin resistance in the heart; improvement of sleep quality and correction of the relative hyposomatotropism of senescence due to high increase in REM sleep and a decrease in REM latency; treatment of hypothermia; treatment of congestive heart failure; treatment of lipodystrophy (e.g., in patients taking HIV or AIDS therapies such as protease inhibitors); treatment of muscular atrophy (e.g., due to physical inactivity, bed rest or reduced weight-bearing conditions); treatment of musculoskeletal impairment (e.g., in the elderly); improvement of the overall pulmonary function; treatment of sleep disorders; and the treatment of the catabolic state of prolonged critical illness; treatment of hirsutism, acne, seborrhea, androgenic alopecia, anemia, hyperpilosity, benign prostate hypertrophy, adenomas and neoplasies of the prostate (e.g., advanced metastatic prostate cancer) and malignant tumor cells containing the androgen receptor, such as is the case for breast, brain, skin, ovarian, bladder, lymphatic, liver and kidney cancers; cancers of the skin, pancreas, endometrium, lung and colon; osteosarcoma; hypercalcemia of malignancy; metastatic bone disease; treatment of spermatogenesis; endometriosis and polycystic ovary syndrome; ~~co~~nteracting counteracting preeclampsia, eclampsia of pregnancy and preterm labor; treatment of premenstrual premenstrual syndrome; treatment of vaginal dryness; age related

decreased testosterone levels in men, male menopause, hypogonadism, male hormone replacement, male and female sexual dysfunction (e.g., erectile dysfunction, decreased sex drive, sexual well-being, decreased libido), male and female contraception, hair loss, Reaven's Syndrome and the enhancement of bone and muscle performance/strength.

**Please replace the paragraph beginning at page 69, line 18 with the following amended paragraph:**

The compositions are intended to be administered by a suitable route, including orally in the form of capsules, tablets, granules, powders or liquid formulations including syrups; parenterally, such as subcutaneously, intravenously, intramiscularly intramuscularly, with intearsternal intersternal injection or infusion techniques (as sterile injectable aq. or non-aq. solutions or suspensions); nasally such as by inhalation spray; topically, such as in the form of a cream or ointment; rectally such as in the form of suppositories; liposomally; and locally. The compositions can be in liquid, semi-liquid or solid form and are formulated in a manner suitable for each route of administration. In certain embodiments, administration of the formulation include parenteral and oral modes of administration. In one embodiment, the compositions are administered orally.

**Please replace the paragraph beginning at page 91, line 12 with the following amended paragraph:**

Standard physiological, pharmacological and biochemical procedures are available for testing the compounds provided herein to identify those that possess activity as androgen receptor modulators. In vitro and in vivo assays known in the art can be used to evaluate the activity of the compounds provided herein as androgen receptor modulators. Exemplary assays include, but are not limited to fluorescence polarization assay, luciferase assay, eo-transfaction and co-transfection assay. In certain embodiments, the compounds provided herein are capable of modulating activity of androgen receptor in a "co-transfection" assay (also called a "cis-trans" assay), which is known in the art. *See e.g.*, Evans *et al.*, *Science*, 240:889-95 (1988); U.S. Patent Nos. 4,981,784 and 5,071,773; Pathirana *et al.*, "Nonsteroidal Human Progesterone Receptor Modulators from the Marie Alga Cymopolia Barbata," *Mol. Pharm.* 47:630-35 (1995)). Modulating activity in a co-transfection assay has been shown to correlate with *in vivo* modulating activity. Thus, in certain embodiments, such assays are predictive of *in vivo* activity. *See, e.g.*, Berger *et al.*, *J. Steroid Biochem. Molec. Biol.* 41:773 (1992).

**Please replace the paragraph beginning at page 93, line 4 with the following amended paragraph:**

The compounds provided herein can be used in the treatment of a variety of conditions including, but not limited to, maintenance of muscle strength and function (e.g., in the elderly); reversal or prevention of frailty or age-related functional decline ("ARFD") in the elderly (e.g., sarcopenia); treatment of catabolic side effects of glucocorticoids; prevention and/or treatment of reduced bone mass, density or growth (e.g., osteoporosis and osteopenia); treatment of chronic fatigue syndrome (CFS); chronic myalgia; treatment of acute fatigue syndrome and muscle loss following elective surgery (e.g., post-surgical rehabilitation); accelerating of wound healing; accelerating bone fracture repair (such as accelerating the recovery of hip fracture patients); accelerating healing of complicated fractures, e.g. distraction osteogenesis; in joint replacement; prevention of post-surgical adhesion formation; acceleration of tooth repair or growth; maintenance of sensory function (e.g., hearing, sight, olfaction and taste); treatment of periodontal disease; treatment of wasting secondary to fractures and wasting in connection with chronic obstructive pulmonary disease (COPD), chronic liver disease, AIDS, weightlessness, cancer cachexia, burn and trauma recovery, chronic catabolic state (e.g., coma), eating disorders (e.g., anorexia) and chemotherapy; treatment of cardiomyopathy; treatment of thrombocytopenia; treatment of growth retardation in connection with Crohn's disease; treatment of short bowel syndrome; treatment of irritable bowel syndrome; treatment of inflammatory bowel disease; treatment of Crohn's disease and ulcerative colitis; treatment of complications associated with transplantation; treatment of physiological short stature including growth hormone deficient children and short stature associated with chronic illness; treatment of obesity and growth retardation associated with obesity; treatment of anorexia (e.g., associated with cachexia or aging); treatment of hypercortisolism and Cushing's syndrome; Paget's disease; treatment of osteoarthritis; induction of pulsatile growth hormone release; treatment of osteochondrodysplasias; treatment of depression, nervousness, irritability and stress; treatment of reduced mental energy and low self-esteem (e.g., motivation/assertiveness); improvement of cognitive function (e.g., the treatment of dementia, including Alzheimer's disease and short term memory loss); treatment of catabolism in connection with pulmonary dysfunction and ventilator dependency; treatment of cardiac dysfunction (e.g., associated with valvular disease, myocardial infarction, cardiac hypertrophy or congestive heart failure); lowering blood pressure; protection against ventricular dysfunction or prevention of

reperfusion events; treatment of adults in chronic dialysis; reversal or slowing of the catabolic state of aging; attenuation or reversal of protein catabolic responses following trauma (e.g., reversal of the catabolic state associated with surgery, congestive heart failure, cardiac myopathy, burns, cancer, COPD etc.); reducing cachexia and protein loss due to chronic illness such as cancer or AIDS; treatment of hyperinsulinemia including nesidioblastosis; treatment of immunosuppressed patients; treatment of wasting in connection with multiple sclerosis or other neurodegenerative disorders; promotion of myelin repair; maintenance of skin thickness; treatment of metabolic homeostasis and renal homeostasis (e.g., in the frail elderly); stimulation of osteoblasts, bone remodeling and cartilage growth; regulation of food intake; treatment of insulin resistance, including NIDDM, in mammals (e.g., humans); treatment of insulin resistance in the heart; improvement of sleep quality and correction of the relative hyposomatotropism of senescence due to high increase in REM sleep and a decrease in REM latency; treatment of hypothermia; treatment of congestive heart failure; treatment of lipodystrophy (e.g., in patients taking HIV or AIDS therapies such as protease inhibitors); treatment of muscular atrophy (e.g., due to physical inactivity, bed rest or reduced weight-bearing conditions); treatment of musculoskeletal impairment (e.g., in the elderly); improvement of the overall pulmonary function; treatment of sleep disorders; and the treatment of the catabolic state of prolonged critical illness; treatment of hirsutism, acne, seborrhea, androgenic alopecia, anemia, hyperpilosity, benign prostate hypertrophy, adenomas and neoplasies of the prostate (e.g., advanced metastatic prostate cancer) and malignant tumor cells containing the androgen receptor, such as is the case for breast, brain, skin, ovarian, bladder, lymphatic, liver and kidney cancers; cancers of the skin, pancreas, endometrium, lung and colon; osteosarcoma; hypercalcemia of malignancy; metastatic bone disease; treatment of spermatogenesis, endometriosis and polycystic ovary syndrome; ~~conteracting~~ counteracting preeclampsia, eclampsia of pregnancy and preterm labor; treatment of premenstrual premenstrual syndrome; treatment of vaginal dryness; age related decreased testosterone levels in men, male menopause, hypogonadism, male hormone replacement, male and female sexual dysfunction (e.g., erectile dysfunction, decreased sex drive, sexual well-being, decreased libido), male and female contraception, hair loss, Reaven's Syndrome and the enhancement of bone and muscle performance/strength. The term treatment is also intended to include prophylactic treatment.

**Please replace the paragraph beginning at page 118, line 13 with the following amended paragraph:**

In a 10 ml round bottom flask, equipped with a magnetic stirrer and under a dry nitrogen atmosphere, 20 mg of 2-methyl-5-nitro-3-propyl-1-(2,2,2-trifluoro-ethyl)-2,3-dihydro-1*H*-indole from last step was dissolved in EtOAc (3 mL), and 50 mg of DDQ was added to the solution and stirred at room temperature until TLC analysis (20%EtOAc in hexanes) showed no more starting material. The reaction mixture was diluted with ethyl acetate (10 mL) and washed with saturated saturated sodium bicarbonate solution, water, and then brine and dried over MgSO<sub>4</sub>. The organic layer was absorbed on silica gel and purified by flash column chromatography, eluting with 10% EtOAc in hexanes. 12 mg of 2-methyl-5-nitro-3-propyl-1-(2,2,2-trifluoroethyl)-1*H*-indole was obtained. <sup>1</sup>H NMR (500MHz, CDCl<sub>3</sub>) δ 8.50 (d, J=2.0 Hz, 1H), 8.14 (dd, J=9.3, 2.0 Hz, 1H), 7.36 (d, J=9.3 Hz, 1H), 4.69 (q, J=8.5 Hz, 2H), 2.76 (t, J=7.6 Hz, 2H), 2.44 (s, 3H), 1.72-1.64 (m, 2H), 2.96 (t, J=7.3 Hz, 3H).